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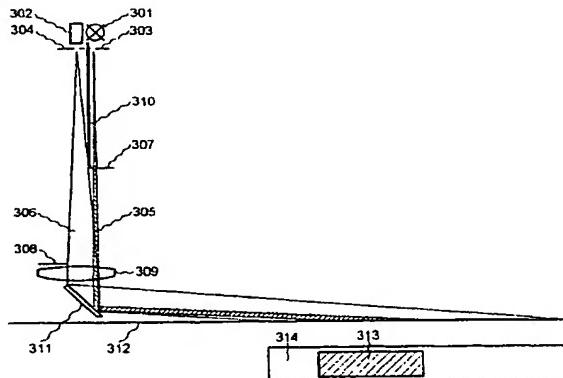
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(54) Title: **METHOD AND APPARATUS FOR MEASURING LIGHT REFLECTIONS OF AN OBJECT**



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(57) **Abstract:** A method and apparatus for measuring light reflections of an object, comprising a light-source illumination-observation assembly, the assembly comprising: (A) an illumination unit comprising an illumination light source and illumination aperture stop being arranged to provide a confined luminous field, an illumination field stop (307) adapted to provide an illumination beam (305) of light from said confined luminous field, an collimating optical element (309) adapted to collimate said illumination beam and to provide an illumination field (313) on an object; (B) an observation unit comprising: at least one observation field stop adapted to provide an observation beam (306) comprising a ray boundary, at least one focusing optical element (309) adapted to focus said observation beam, an observation light receiver; and (C) at least one common optical element (309) arranged so that said illumination beam and said observation beam form an overlap therein; and (D) a unit separation stop (310) adapted to stop light from said illumination unit in reaching said observation light receiver of said observation unit; wherein said at least one observation field stops (308, 310, 311) comprises at least one limiting field stop (310) adapted to limit said ray boundary of said observation beam and to maintain said overlap of said illumination beam and said observation beam; a diffuser light-source assembly; and use thereof.



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

In: International Application No
PCT/DK 03/00222A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G01N21/55 G01N21/47 F21V11/14 G01N21/88

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 ~G01N G03B F21V

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DELTA: "On site quality control of road markings & road surfaces in accordance with CEN specifications" LTL2000 RETROMETER, MANUAL, 'Online! 11 March 1999 (1999-03-11), pages 1-49, XP002225022 Retrieved from the Internet: URL: http://www.delta.dk/services/products/road-test-equip/04_manua/ltl2000/manua_uk.pdf 'retrieved on 2002-11-24!	1-6, 9, 10, 12, 13, 22, 24, 26, 27
A	page 48	11
A	WO 97/27470 A (DELTA LYS & OPTIK ; NIELSEN HANS OLE (DK); HANSEN JAN HARRIES (DK)) 31 July 1997 (1997-07-31) figure 4	3, 6, 8
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 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

° Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
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Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 839 812 A (GE XIAOQIN ET AL) 24 November 1998 (1998-11-24) column 3, line 66 - column 5, line 5 -----	16-18, 20,21
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X	GB 2 110 416 A (KALNEW OPTICAL IND) 15 June 1983 (1983-06-15) figure 1 page 1, line 104 - line 108 -----	16-18
A	US 4 250 538 A (DURBIN JOHN A ET AL) 10 February 1981 (1981-02-10) figure 3 -----	16

INTERNATIONAL SEARCH REPORT

International application No.
PCT/DK 03/00222

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-15,22,24-27

Apparatus and method for measuring light reflections of an object

2. claims: 16-21,23

Diffuser light-source assembly

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/DK 03/00222

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